Automatic X-Ray Film Processor

Intra – X

(Australia / New Zealand Models Only)

USER GUIDE

Operation and Maintenance Manual

WARNING:
Do not plug into the electrical mains power supply before reading this manual – or before filling the machine with liquids.

Register your machine by returning the Warranty Card to enable full customer support.

Machine serial number to be quoted on all correspondence:

Introduction

Thank you for purchasing your automatic film processor from Velopex, we certainly appreciate your business. In order to maintain the quality of our product and your processing it is important that you pay close attention to the following instructions contained in this user's manual. This will ensure a long life for your processor.
This manual is to be used with the following processors: Intra – X.
Warranty may be voided if the processor is incorrectly installed or maintained outside the guidelines set forth in this manual.
Caution: ***Use assistance when unpacking and placing the machine.***

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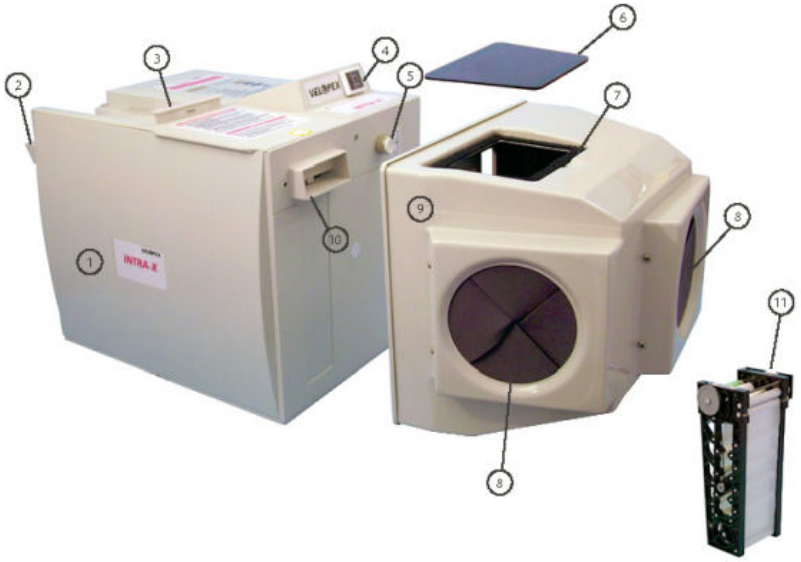
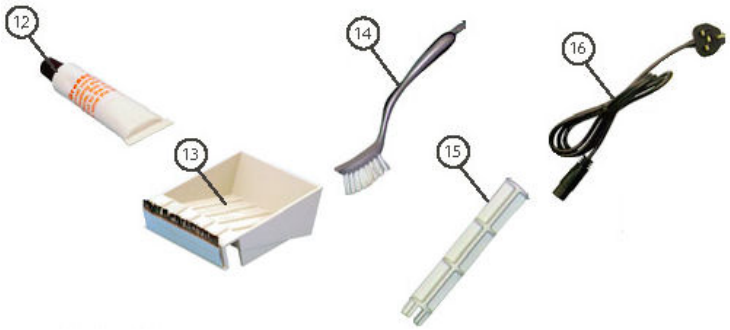
Velopex Processor – Exterior



1. Velopex X-ray Film Processor – Left Side
2. Film Collector
3. Endo Slide
4. On/Off Power Switch
5. 'Run' Button
6. Viewer Cover
7. Daylight Loader Viewing Window
8. Hand Entry Port/Glove
9. Daylight Loader - Left Side
10. Film Entry Guide
11. Transport Module

Machine Accessories and extras supplied



12. Silicone Grease
13. Film Collecting Tray
14. Cleaning Brush
15. Turning Tool
16. Electricity Supply Cord

Table of Symbols

~	Alternating Current
○	Off (Power: Disconnect from the mains)
|	On (Power: Connect to the mains)
	Type 'b' equipment
	'RUN' Button / Process switch
	Protective Earth (Ground)

Symbols used within Manual

	Tip
	Attention / Warning

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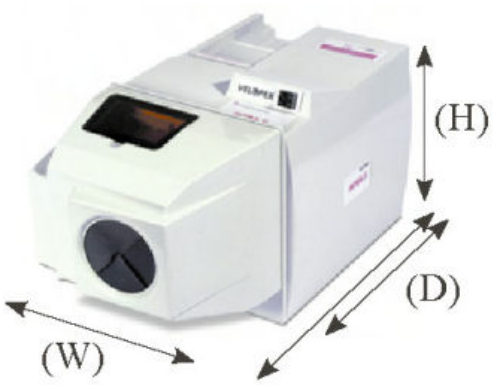
Specification



Width (W)	**290mm**
Depth (D) **Inc. Loader**	**435mm** **635mm**
Height (H)	**315mm**
Weight: **Empty** **Full Tanks**	 **12.1Kg** **16.3Kg**
Tank Capacity	**1.4 litres each**
Standard Supply Voltage	**220-240v 50Hz**
Warm-up Time	**10 min. approx.**
Film Feed Speed	**470mm per min.**
Max Film Width	**65mm**
Processing Time: **Dry** **Wet-Endodontic**	 **4 min. approx.** **2 min. approx.**

Pre Installation Instructions

Unpacking the Velopex

Note: For unpacking and lifting the machine into position it is important to have assistance.

The machine comes in a single carton containing;
Machine, Operators Manual, Silicone Grease, Electrical Cord, Transport Module Turning Tool, Cleaning Brush, Chemical Change Chart, and Daylight Loader.

1. Familiarise yourself with the layout of the machine by referring to the images as you progress through the manual.
2. Lift the machine from the carton and position on counter top. Remove outer and inner packaging. The transport modules are protected by internal packing pieces: these must be removed.

Siting of the Velopex

When using the machine in daylight or a darkroom, avoid sources of intense light. Do not mount the unit under a window, fluorescent light or flood lamp.

Important Note: A well ventilated position is mandatory.

The ambient temperature must be below 27°C.
Prevent siting the machine above or near other electrical or mechanical equipment. Surfaces susceptible to water or chemical damage should be avoided, such as carpeted areas.

1. Counter
    a. Use a stable and level counter that will support a weight of at least 50Kg.
    b. When the machine is filled with chemicals make sure the stand does not rock or shake. Never move the machine with chemicals in the tanks.
2. Electrical Supply
    a. 230Vac 50Hz, 10A, 1150W.
    b. The power source must be within 1 metre of the machine. It should be easily accessible for operation and maintenance.

WARNING: X-ray radiation can be harmful to patient, technician and dentist. Inadequate lead shielding of the darkroom or film storage area will also cause fogging from exposure of films to stray x-ray radiation. Consult your local codes, Health Department or Dental Equipment Dealer for proper construction of darkroom or placement of film processing equipment in the vicinity of x-ray radiation sources.

Daylight Loader Installation

1 **Bring the lid to the upright position.**

TIP: *The lid can be kept in the upright position while the machine is open, or lifted away.*

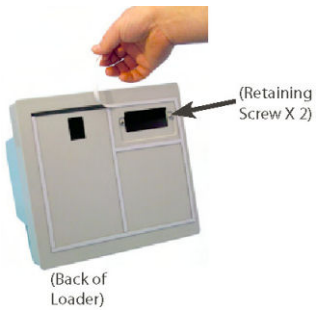
2 **Remove side panel by sliding it upwards in its runners.**

3a **Remove all packing / wrapping material and modules.**

TIP: *Start with the dryer module, then the water module followed by the fixer and developer modules. Those should be removed by sliding the tanks out.*

3b

WARNING: *When removing the fixer and developer modules, slide the tanks sideways until completely clear of the immersion heaters mounted on the machine internal wall.*



4 **Unscrew the two retaining screws and remove white protective strip from sealing material on the back of the loader.**

Daylight Loader Installation (cont.)

(Front of Loader)

5 **Remove protective film from viewing window cover.**

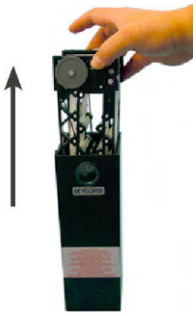
6 **Slide loader over film entry guide and ‘RUN’ button, press the loader firmly against the machine.**

7 **Secure loader with the two retaining screws.**

Filling with Chemicals

8 **Remove modules (see installation sections 1 – 3b).**

⚠ ***WARNING:*** *Ensure machine is disconnected from mains power supply whilst filling. Never turn the machine on with tanks empty.*



9 **Lift the transport modules from their respective tanks.**

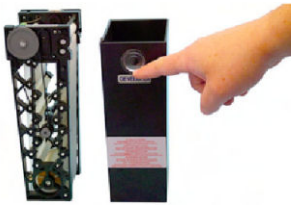
⚠ ***WARNING:*** *Before filling with chemicals run the machine with clean water in the developer, fixer and water tanks with the transport modules in position, for a complete cycle to remove all packing debris, dust, etc..*

Filling With Chemicals (cont.)

10 **Fill tanks with respective chemical solution or water, pouring in 1400ml of fluid.**

TIP: *Use Velopex chemicals designed for your unit. If unobtainable use only another proprietary chemical and always read and follow instructions on bottle.*

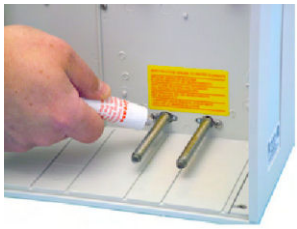
WARNING: *Do not use chemistry or film designed for manual processing.*



11 **Fill the tanks up to the lowest edge of the sight glass.**

12 **Lower transport modules carefully into their respective tanks. Top up – the correct liquid level will show half way up the sight glass.**

WARNING: *This liquid level should be maintained at all times,*



13 **Grease immersion heaters for developer and fixer tanks with the lubricant provided.**

TIP: *Spread a thin smear of lubricant over the two projecting metal heating elements.*

WARNING: *Do not over grease.*

14 **To avoid spillage, carefully return tanks to the machine. Start with the developer tank followed by the fixer, water tanks and finally the dryer module. Engage the module drive pins into the drive dogs, working from right to left.**

TIP: *Slide the developer and fixer tanks sideways onto the immersion heaters till backed up fully against the machine internal wall.*

15a **Return side panel and lid.**

WARNING: *Wipe dry any spilled solution.*

Filling With Chemicals (cont.)

15b

Each time the Machine is initiated, a change of chemical will be injected in the machine tank. The overflow will return to the same containers.

TIP: *Check that all modules are engaged and running smoothly by passing a 'clean up film' through the machine. If it fails to exit the machine, check engagement of modules.*

WARNING: *The machine will not operate with the lid open.*

Operating the Processor

1

Plug in electric cord and switch on..

TIP: *After approx. eight minutes the processor will go into 'stand by mode' by which time the chemicals will have reached their correct temperature.*

WARNING: *Always turn mains electricity switch off at night.*

2

Correct temperature is indicated when the red light is extinguished.

TIP: *The time taken to achieve the correct temperature depends on the room temperature (usually 10-15 minutes).*

Image for instruction only, viewing window is closed when operating machine

3

The Velopex is equipped with automatic stand-by mode. To initiate processing press the 'RUN' button.

TIP: *From time to time the temperature light will illuminate for short intervals as the machine requires heat throughout the day.*

WARNING: *Before placing in the machine, intra oral film packets should be wiped clean of all mouth contaminants.*

Operating the Processor (cont.)

Image for instruction only, viewing window is closed when operating machine

4 **Put hands through loading ports and place film inside daylight loader.**

⚠ ***WARNING:*** *Always remove old film wrappers from inside the loader.*

Image for instruction only, viewing window is closed when operating machine

5 **Press 'RUN' button, strip wrapping from film, and insert film in entry slot.**

⚠ ***WARNING:*** *A second film can be inserted only after the first film has fully entered the machine. Do not remove hands from loading section until the film has completely entered the machine.*

6 **Each day make sure chemical levels are correct. If necessary, top up chemicals (see installation sections 10-12).**

☞ ***TIP:*** *Before processing, run through a "clean up film" or any spare extra oral film. This helps clean the transport system.*

⚠ ***WARNING:*** *The same film may be used for this purpose for one week, after which discard the old film and use a fresh one.*

7 **All films are collected in the film catcher at the rear of the machine.**

⚠ ***WARNING:*** *At the end of the day turn off main power switch.*

8 **For quick viewing of x-rays use the endo slide, which will halve the time of processing. To use: press the endo slide fully down, by pressing the latch and lowering the slide.**

☞ ***TIP:*** *This procedure is only "dry-to-wet", which means the film should be washed with water and hung up to dry when needed for archiving.*

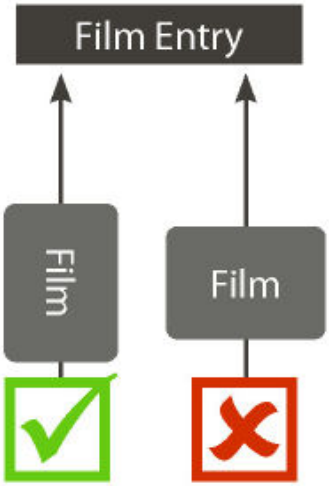
⚠ ***WARNING:*** *The endo slide must be returned to the up position before further processing.*

9 **Remove film from the endo slot.**

☞ ***TIP:*** *After film exits, you can view and then wash it with water and hang it up to dry.*

⚠ ***WARNING:*** *Make sure film does not fall back into the processor – remove it as soon as it emerges.*

Operating the Processor (cont.)



10 **Film feeding direction.**

TIP: *Centre the film on the guide provided to post the film through the processor..*

WARNING: *Make sure the film is fed in squarely, and the short edge is the leading edge.*

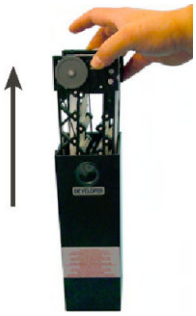
Velopex Processor Cleaning

1 **Quality Assurance – for instructions refer to back of VISCHECK Quality Manager board supplied with your machine.**

TIP: *Regular use of this product will ensure the quality of the film processing and reduce the risk of retakes. Vischeck will also tell you when to change the chemicals.*

2 **Open lid, remove side cover, and remove tanks and modules (see installation sections 1-3b and 8-9).**

WARNING: *Carry out the cleaning routine at each chemical change or approx. once every four weeks, according to use.*



3 **Drain Modules over the tanks before removing them.**

TIP: *Tip the module and lean it on the edge of the tank letting it drain before completely removing it*

WARNING: *The modules are wet with chemicals, handle with care. May cause staining or corrosion of surfaces, skin and eye irritation. Wipe away any spillage immediately or flush with copious amounts of water.*

Velopex Processor Cleaning (cont.)

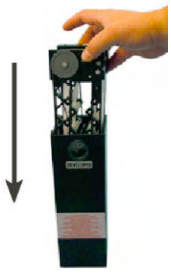
4 **Module cleaning – Immerse the modules in a container or sink with hot water and scrub with the supplied brush around the gears and roller ends.**

TIP: *Use the turning tool; turn the gears and belts by hand to assist in thorough cleaning.*

WARNING: *Do not use boiling water; it will damage the modules. Use only cold water when cleaning the machine tanks.*

5 **Clean modules using the Velopex cleaning tablets. Empty chemical and water tanks. Refill with fresh cold water.**

WARNING: *Do not empty cleaning solution into containers containing processing chemicals. Follow instructions supplied with cleaning tablets.*



6 **Replace the modules in their tanks and run for one cycle. Drain tanks again, remove modules and refill with fresh cold water.**

WARNING: *Always return a module to the tank it was removed from e.g. developer-to-developer, fixer-to-fixer.*

7 **Add Velopex cleaning tablets one per tank.**

8 **Replace modules and run for two cycles at operating temperature.**

9 **Dryer module cleaning – Place dryer module in container or sink filled with fresh cold water. Add one Velopex cleaning tablet and soak for at least 10 minutes. Rinse thoroughly with water to remove all cleaning solution.**

WARNING: *Make sure you drip dry the module before replacing in the dryer compartment.*

Velopex Processor Cleaning (cont.)

10 **Removal of film debris: Open bottom hatch of loader**

WARNING: *Ensure hatch is securely closed and light tight.*

11 **Remove old film wrappers from daylight loader. Wipe clean the interior of loader.**

TIP: *The interior of the daylight loader should be cleaned with cold sterilising solution, wipe dry after appropriate period.*

12 **Fill up with chemicals (see installation section , page 5). For best results use Velopex chemicals.**

TIP: *Use the chart provided and keep a note of the date when chemicals were changed. Process a Vischeck strip to produce the master reference strip and place in position on the quality chart (follow Vischeck instructions for use).*

Trouble Shooting

No.	SYMPTOM	POSSIBLE CAUSE	ACTIONS
1	Machine does not operate	Power supply	Check mains power is plugged in and supply is switched on. Note: Velopex machine will run one cycle when switched on and lid in correct position.
		Machine is in standby mode	Check by pressing RUN button that machine is not in standby mode.
		Blown fuse	Switch off mains power supply and un plug machine. Check the two fuses in cord socket on back of machine. If either fuse is blown, call service.
		Lid open	The machine is fitted with a safety switch: If the lid is not correctly closed the safety switch will prevent the machine from operating. Check by opening and closing again.
		Cord	Check that cord is fully engaged in both plug and socket on the back of the machine.
2	Temperature indicator light stays on		At normal room temperature average warm up time is 10 – 15 minutes; in an unheated environment this time could lengthen. If the light stays on for an abnormally long time, call for service.
3	Solution(s) overheating		Do not use machine – Call for service.
4	Films do not enter through the film entry guide	Machine is in standby mode	Press RUN button – Machine may be in standby mode.
		Transport modules not in place	Open machine lid and check correct engagement of transport modules.
5	Film lost in machine	Transport modules not in place	Check individual module by rotating with turning tool to manually feed film. Check that the transport modules are correctly located in their drive dogs and running correctly. If not, relocate.
		Endo interrupt bar	Check that the bar is fully in the up position.
		Wrong positioning of transport module spring	Check the springs on the modules for correct positioning. Use the module turning tool to rotate the belts for inspection, and run a test film through the module using this tool.
		Dirty transport modules	Check that all the modules have been put through the correct cleaning procedure.
		Damaged/Torn belt	Replace module.
		Static electricity in the dryer section of the machine	Add a little domestic fabric softener to the washing water when washing the dryer module to avoid static. **Important:** Fabric softener should be used on the dryer module ONLY. Do not use on the developer, fixer or water modules.
6	There is light fog	Lid open	Check that the top lid is firmly in place.
		Dark room not light tight	Check that the dark room is light tight, and that the safelight is sound (e.g. process a test with safelight off).
		Daylight loader not secured	Check that the daylight loader is firmly secured, including removal of cover tape from self adhesive mounting.
		Light leaks	When the daylight loader is used, ensure that the machine has not been sited in direct sunlight or in intense lighting conditions (e.g. directly under spotlights or strip lights).
			Do not remove your hands out of the hand entry sleeves before the film has fed completely into the machine. Fog at one end only of the film indicates premature removal of hands from daylight loader.
			Check that window cover on the loader has been correctly replaced and check at hand entry points to ensure there is a good light seal around the wrists – if not call for service.
		Close to x-ray source	Check whether films have been store to close to x-ray source, and relocate/replace.
		Film box lid open	Check that the lid has not been left off film box (i.e. process one film from a new box of film.
		Film expired	Check expiry date on film box to ensure films are not out of date. (Keep films in cool, dry place – excessive heat can cause premature aging of film.

Test for fog by feeding an unexposed film through the machine. It should process as a transparent piece of film base and there should be no shadows or blackness on it. **Regular use of Vischeck is the best tool for early diagnosis of processing and xray problems.**

Trouble Shooting (cont.)

No.	SYMPTOM	POSSIBLE CAUSE	ACTIONS
7	Dark film	Chemical contamination	Check that there has been no chemical mix up, leading to cross contamination.
		Mixing of developer	Check that the developer has been correctly mixed (if relevant).
		Temperature	Check the temperature of the developer and fixer tanks. These are generally set at: developer 25°C, fixer 27.5°C. If the developer temperature is significantly higher, it could lead to dark film. Switch off the machine and call for service.
8	Films too light	Chemicals exhausted	Replace with fresh (this will depend on the volume of film being processed and the length of time since last chemical change).
		Chemicals contaminated	Clean machine, replace chemicals with fresh solutions.
		Developer incorrectly mixed	Replace with fresh.
		Chemical level too low	Top up.
		Temperature too low	If temperature indicator light does not go out, check with thermometer – generally set at: developer 25°C, fixer 27.5°C. If significantly below these temperatures, call for service.
		Film exposure	Check films have been exposed correctly.
9	Films dirty or marked	Water tank dirty	Clean module thoroughly (insufficient cleaning can lead to a build up of algae).
		Transport modules dirty	Check transport modules are being cleaned correctly (see cleaning instructions above).
		Chemical level too low	Top up.
		Wrong positioning of modules	If found in wrong order, contamination will have occurred. Thoroughly clean modules and tanks, refill with fresh chemicals.
		Light leaks	Check for stray light entering machine. Proceed as for fogging (see symptom #6).
10	Sudden change in image density	Wrong solutions	Make sure the solutions are in the correct tanks.
		Developer contamination	Replace developer if contaminated with fixer.
		Temperature	Check developer temperature.
		X-ray unit	Check x-ray unit.
11	Film not drying	Dryer	Make sure dryer is working and blowing hot air.
		Humidity	Look for poor air circulation or high humidity in processing area.
		Electrical component	Switch off machine. Switch on after 10 seconds, If still not drying call for service.
12	Deposits on film – White Marks	Fixer	Check for contaminated or wrongly mixed fixer.
		Fixer deposits	Check for dryer module contaminated by fixer deposits.
13	Deposits on film – Black Parallel Lines	Dirt	Clean entry slot or feeder guides.
			Clean bridge-over rollers.
			Clean modules.
		Belts jammed	Check belts are turning properly.
14	Dark areas on film	Static damage	Takes the form of dots, fern like lines or lightening strikes; check for low ambient humidity in processing area. Clean with anti static solution.

Trouble Shooting (cont.)

No.	SYMPTOM	POSSIBLE CAUSE	ACTIONS
15	White opaque patches on low density areas (indicates lack of fixing)	Temperature	Check fixer temperature.
		Fixer	Check for exhausted fixer.
16	Mottle	Dirty transport module	Clean modules.
		Film expired	Check age and storage conditions of film.
		Light fogging	See above, symptom #6.
17	Films coming out wet	Air coming out of vent is not warm	After the processor has been running for two minutes, check that the air coming out of the vent over the dryer module is warm. If not, switch off the processor at the mains power switch for two minutes and switch it on again. If that does not correct the fault, call for service.
18	Contamination	Chemicals	When changing chemicals make sure the tanks are drained down fully and rinsed out. Fresh chemical will be spoiled by contamination, leading to poor results.
19	Abnormal odour, overheated or unusual noises		Immediately switch processor off and unplug from mains power supply. Contact your supplier.

Service Log

Date	Service Description	Serviced By
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MC = Monthly Cleaning; WIA = When In Area; SC = Service Call

TIP: *Use this table to record any service/maintenance done, including: Installations, Chemical Changes, Engineer Servicing, Cleaning, etc. Keep this log for reference and use at any time you contact your supplier.*